

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**  
**BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

Attorney Docket No. 0837RF-H552-US

In Re Application of:  
**J. DONN HETHCOCK *et al.***

Serial No.: 10/533,427

Filed: 17 JANUARY 2006

For: **METHOD AND APPARATUS  
FOR Z-DIRECTION  
REINFORCEMENT OF  
COMPOSITE LAMINATES**

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§ Examiner: **JEFF H. AFTERGUT**  
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§ Confirmation No.: **5925**  
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§ Art Unit: **1791**  
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**REPLY BRIEF**

**Filed Via EFS-Web**  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Dear Sir:

In the Examiner's Answer mailed 15 September 2009, the Examiner raised certain new points of argument. Accordingly, this Reply Brief is being filed pursuant to 37 C.F.R. § 41.41(a) in response to the Examiner's Answer, for which the two-month date for response is 16 November 2009, as 15 November 2009 falls on a Sunday.

<b>CERTIFICATE OF TRANSMISSION UNDER 37 C.F.R. § 1.8(a)(1)(i)(C)</b>
Date of Transmission: 13 November 2009
I hereby certify that this correspondence is being transmitted to the U.S. Patent and Trademark Office (USPTO) via the USPTO electronic filing system (EFS-Web) on the date shown above.
By: <u>/darencdavis#38425/</u> Daren C. Davis

**Status of Claims (37 C.F.R. § 41.37(c)(1)(iii)):**

The present Application, which is an application filed on 29 April 2005 under 34 USC § 371 from International Patent Application Serial No. PCT/US2003/034946 claiming the benefit of U.S. Provisional Patent Application Serial No. 60/423,641, filed on 1 November 2002, entered the national stage with 44 claims. In a Preliminary Amendment filed 29 April 2005, claims 1-21 and 29-31 were canceled, leaving 20 claims (*i.e.*, claims 22-28 and 32-44) pending.

In a telephone conversation with Appellants' Representative, James E. Walton, on 10 March 2008, the Examiner indicated that the pending claims were the subject of a restriction requirement and Mr. Walton provisionally elected with traverse to prosecute the alleged invention of Group I (*i.e.*, claims 22-26). Appellants affirmed the election in their Response dated 20 August 2008. Thus, claim 27, 28, and 32-44 stand withdrawn from consideration.

In a Final Office Action dated 20 October 2008 ("Final Office Action"), the Office Action Summary indicates that claims 22-26 are finally rejected and that no claims are allowed or objected to.

The status of the claims is, therefore, believed to be as follows:

Allowed claims:	None
Claims objected to:	None
Claims rejected:	22-26
Claims withdrawn:	27, 28, and 32-44
Claims canceled:	1-21 and 29-31.

Appellant hereby appeals the Examiner's final rejection of the foregoing claims (*i.e.*, claims 22-26), which presently stand rejected over the cited references.

**Grounds of Rejection to be Reviewed on Appeal (37 C.F.R. § 41.37(c)(1)(vi)):**

Issue No. 1. Claims 22, 23, and 26 stand rejected under 35 USC § 102(b), as being anticipated by U.S. Patent 4,888,228 to Sidles ("Sidles"). Thus, the issue is whether Sidles discloses every limitation of claims 22, 23, and 26 in the same relationship to one another as set forth in claims 22, 23, and 26.

Issue No. 2. Claims 22-26 stand rejected under 35 USC § 103(a), as being unpatentable over Sidles. Thus, the issue is whether the teachings of Sidles disclose or suggest all of the limitations of the claims as necessary for establishing a *prima facie* case of obviousness.

The Office states in its Examiner's Answer:

*The appellant's statement of the grounds of rejection to be reviewed on appeal is substantially correct. The changes are as follows: Whether claims 22-26 are properly rejected under 35 USC 102(b) as anticipated by or in the alternative under 35 USC 103(a) as obvious over Sidles.<sup>1</sup>*

Reference is drawn to Appellants' remarks in their Amended Appeal Brief of 21 July 2009:

*It should be noted that the Office indicates that "[c]laims 22-26 are rejected under 35 USC § 102(b),"<sup>2</sup> but then states explicitly that "[i]t being noted here that the rejection of claim 24 is based solely upon obviousness (and not anticipation). The same is true for claim 25...."<sup>3</sup> The Final Office Action indicates that "[c]laims 22-26 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Sidles for the same reasons as expressed in paragraph 7 of the Office action dated March 20, 2008."<sup>4</sup> Accordingly, claims 22, 23, and 26 stand rejected under 35 USC § 102(b) over Sidles.*

While the Office contends in its Examiner's Answer that claims 22-26 are rejected under 102(b), the Office explicitly states in the Final Office Action and in the Examiner's Answer<sup>5</sup> that claims 24 and 25 are rejected only under 103(a). Accordingly Appellants'

<sup>1</sup> Examiner's Answer, p. 2, ll. 15-18.

<sup>2</sup> Final Office Action, Detailed Action, p. 2, l. 14.

<sup>3</sup> Office Action of 20 March 2008, Detailed Action, p.5, ll. 4-5.

<sup>4</sup> Final Office Action, Detailed Action, p. 2, ll. 14-16.

<sup>5</sup> See Examiner's Answer, p.6, ll. 15-17.

characterization of claims 22, 23, and 26 as being rejected under 102(b) is proper. Claims 24 and 25 are rejected only under 103(a) and not under 102(b). Therefore, this Reply Brief addresses two issues: the rejection of claims 22,23, and 26 under 102(b) and the rejection of claims 22-26 under 103(a).

**Argument (37 C.F.R. § 41.37(c)(1)(vii)):**

**Issue No. 1 – Rejection Under 35 USC §102(b) over Sidles**

In the Examiner's Answer, the Office continues to allege that Sidles anticipates the claimed invention. The Office now relies upon Sidles' teaching that "[t]he fibers may form loops on either side by tuft insertion techniques" as the basis for its allegation that Sidles discloses "inserting discrete fibers through each preform generally in a Z direction," as required by independent claim 22 and the claims dependent thereto. Sidles, however, fails to define the nature or configuration of the "tufts" described therein and fails to describe the term "tuft insertion techniques." With Sidles silent with regard to the nature of its tufts, the Office fails to provide any evidence as to support its contention that inserting a tuft is the same as inserting discrete fibers. Rather the Office baldly asserts that "such known tuft insertion techniques clearly included insertion of discrete fiber tufts into the assembly as an alternative to insertion of a continuous fiber followed by severing one side of the same."<sup>6</sup> Moreover, as the Office is well aware, "[i]t is well settled that a prior art reference is relevant for all that it teaches to those of ordinary skill in the art."<sup>7</sup> In determining patentability, one simply cannot ignore parts of references or pertinent parts of the prior art. As previously presented by Appellants, Sidles teaches that "[s]ix plies were prepared from an all glass substrate having **woven loops** on either side. Cut pile was formed on one side by **cutting the tips from the loops**" (emphasis added).<sup>8</sup> Thus, in Sidles' embodiments having loops on both sides of the substrate, the loops are formed from continuous strands of fibers that are woven through the substrate. In light of this teaching by Sidles, Appellants respectfully assert that it is likely Sidles used the "tuft insertion techniques" to produce its woven loops. It should be noted that the Office admits on the record that "[t]he reference clearly suggested that continuous fibers were tufted through the assembly."<sup>9</sup> Taking all of the teachings of Sidles, especially in light of the Office's admission that "continuous fibers were tufted through the assembly," Appellants respectfully assert that one of ordinary skill in the art of the invention would have

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<sup>6</sup> Examiner's Answer, p. 3, ll. 20-22.

<sup>7</sup> *In re Fritch*, 23 U.S.P.Q.2d (BNA) 1780, 1782 (Fed. Cir. 1992).

<sup>8</sup> Sidles, col. 5, ll. 6-8.

understood that, in Sidles, continuous fibers were woven through the substrate, rather than inserting discrete fibers, as required by claim 22 and the claims dependent thereto. Sidles cannot anticipate the present invention, as set forth in claim 22 and the claims dependent thereto because Sidles fails to disclose each and every limitation of the claimed invention in the same relationship as set forth in the claims.

In the Examiner's Answer, the Office continues to contend that Sidles teaches "infusing a resin material through each preform and the overlapped Z-direction fibers and loops," as required by independent claim 22 and the claims dependent thereto.<sup>10</sup> The Office now relies upon a first portion of Sidles<sup>11</sup> that teaches the binder 40 "substantially impregnates the plies" and a second portion of Sidles<sup>12</sup> that describes that the adhesive or binder layer "completely saturates the substrate." The Office then attempts to construe Appellants' claimed term "infusing" to match the teachings of Sidles by using definitions from general dictionaries, *i.e.*, Dictionary.com and the American Heritage Dictionary.<sup>13</sup> Appellants continue to respectfully assert that the phrase "infusing a resin material" is a term of art, which is correctly interpreted based upon information particularly concerning composites manufacturing, rather than any general-purpose dictionary. Appellants' position is proper, especially in light of *Phillips v. AWH Corp.*<sup>14</sup> Attention is drawn to Appellants' remarks provided in page 10, line 12, through page 13, line 6, of their Amended Appeal Brief of 21 July 2009.

The Office contends in its Examiner's Answer that "the severing of the loops of fibers to form loops on one side and tufts on the opposed side would have resulted in discrete fibers being integrated into the base fabrics (and thus insertion of discrete fibers therein)"<sup>15</sup>. Rather than supporting the Office's contention that Sidles anticipates the present invention, Appellants believe that the Office's contention confirms that Sidles fails to anticipate claim 22 and the claims dependent thereto, as the present claims require

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<sup>9</sup> Examiner's Answer, p. 3, ll. 18-19.

<sup>10</sup> Examiner's Answer, p. 4, ll. 23-24.

<sup>11</sup> Examiner's Answer, p. 4, ll. 5-15, citing Sidles, col. 2, l. 60 through col. 3, l. 4.

<sup>12</sup> Examiner's Answer, p. 4, ll. 16-22, citing Sidles, col. 4, ll. 36-42.

<sup>13</sup> Examiner's Answer, p. 5, ll. 1-8.

<sup>14</sup> *Phillips v. AWH Corp.*, 03-1269, -1286 (Fed. Cir., July 12, 2005) (Fed. Cir. BBS).

<sup>15</sup> Examiner's Answer, p. 5, ll.

"inserting discrete fibers," not a process wherein a continuous fiber woven into the substrate are then cut to form discrete fibers. Accordingly, Sidles cannot anticipate claim 22 or the claims dependent thereto.

The Examiner's Answer also alleges that "the reference clearly expressed that known tuft insertion techniques in the art would have been useful for insertion of the loops of material which included formation of the tufts with discrete fibers."<sup>16</sup> The Office, however, has failed to point out wherein Sidles teaches that the tuft insertion techniques are used to insert discrete fibers. While such tuft insertion techniques may be useful in inserting discrete fibers, the cited reference fails to so teach. Thus, Sidles fails to anticipate claim 22 and the claims dependent thereto.

The Office, in its Examiner's Answer, further alleges that "insertion of a continuous length fiber followed by severing the same is in fact insertion of discrete fiber into the fabric plies as the claims do not exclude the subsequent cutting step."<sup>17</sup> Appellants' claim 22 requires "inserting discrete fibers." This step does not read on inserting a continuous fiber then severing the fiber. A fiber is not discrete if it is part of a continuous fiber that is subsequently severed. Accordingly, Sidles fails to anticipate claim 22 and the claims dependent thereto.

Appellants respectfully request reversal of the rejection under 102(b) based upon the remarks in their Amended Appeal Brief of 21 July 2009 and the remarks provided herein.

#### **Issue No. 2 – Rejection Under 35 USC §103(a) over Sidles**

The Office, in its Examiner's Answer, traverses Appellants' arguments that Sidles does not meet the criteria established in *KSR* to make a proper rejection under 103(a).<sup>18</sup> The Office alleges that "Sidles did in fact suggest the inserting of discrete fibers through each preform generally in the Z-direction."<sup>19</sup> Appellants respectfully assert that Sidles fails

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<sup>16</sup> Examiner's Answer, p. 5, ll. 19-22.

<sup>17</sup> Examiner's Answer, p. 5, l. 22, through p. 6, l. 2.

<sup>18</sup> Examiner's Answer, p. 7, ll. 18-20.

<sup>19</sup> Examiner's Answer, p. 7, l. 21, through p. 8, l. 1.

to teach or suggest inserting discrete fibers, as required by claim 22 and the claims dependent thereto, for the reasons set forth in their Amended Appeal Brief of 21 July 2009 and in this Reply Brief concerning the 102(b) rejection of claim 22 and the claims dependent thereto. As discussed *supra*, Appellants respectfully assert that one of ordinary skill in the art would have understood Sidles to use tuft insertion techniques to weave a continuous fiber through the substrate, which was subsequently severed. The Office has provided no evidence that one of ordinary skill in the art would have understood that altering Sidles process to insert discrete fibers would have been desirable or even possible to try. Accordingly, the present invention, as set forth in claims 22-26, is not rendered obvious by Sidles.

The Office contends that “[e]ven if one views the conventional tuft insertion techniques as not expressly teaching insertion of discrete fibers into the preforms, it certainly would have been obvious to one of ordinary skill in the art to employ conventional tuft insertion techniques to insert discrete loops of material into the preforms such as those techniques used to make hand made rugs and carpets.”<sup>20</sup> Yet the Office merely relies upon Sidles, with no teachings from the hand made rug and carpet art. If the Office wished to introduce teachings from the hand made rug and carpet art, the Office should have included such a reference in its rejection. Absent the inclusion of such a reference or evidence, the obviousness rejection over Sidles is *prima facie* deficient.

While the Office, in its Examiner’s Answer, continues to allege that Sidles “suggested the infusing of a resin matrix within the preforms (within the common and known reasonable meaning given to the term ‘infusing’).”<sup>21</sup> Appellants maintain that Sidles fails to provide any suggestion of “infusing,” as one of ordinary skill in the art would understand, as discussed *supra* concerning the 102(b) rejection. The term “infusing” is a term of art and, thus, has special meaning within the composites manufacturing art. Appellants respectfully submit that definitions from general dictionaries fail to adequately or appropriately define the term “infusing,” as it is used in the rejected claims.

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<sup>20</sup> Examiner’s Answer, p. 8, ll. 15-19.

<sup>21</sup> Examiner’s Answer, p. 12, l. 22, through p. 13, l. 1.

Appellants respectfully request reversal of the rejection under 103(a) based upon the remarks in their Amended Appeal Brief of 21 July 2009 and the remarks provided herein.

## **Conclusion**

In view of the foregoing reasons and the reasons stated in Appellant's Appeal Brief, Appellant respectfully requests the Board of Patent Appeals and Interferences to reverse the Examiner's rejections as to all of the appealed claims.

No fees are deemed to be necessary; however, the undersigned hereby authorizes the Commissioner to charge any fees which may be required, or credit any overpayments, to Deposit Account No. 502806.

**Please link this application to Customer No. 38441 so that its status may be checked via the PAIR System.**

Respectfully submitted,

13 November 2009  
Date

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**CUSTOMER NO. 38441**

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